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The passing of western civilization

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ABSTRACT

Modern western civilization reached a pinnacle in the last half of the 20th century, spending over 200 years evolving and spreading throughout the world. A robust social contract, technological advancement and pervasive economic success in the context of democracy and capitalism propelled the project. Unfortunately, two underlying pillars of past success developed intensifying negative consequences, hastening socioeconomic decline: insatiable collective wants and global population growth. The rise and decline of civilizations in history is well documented, yet oddly ignored in today's dialogue. Contemporary civilization is assumed to be immune from forces that shaped cycles of past civilizations—that our age is somehow an exception. For the first time in human history planetary systems that seemed invisible until recently are sending us the message that our civilization is not exceptional, that there are finite limits to the thrust of humanity's present trajectory. Viable solutions curbing the effects of habitat destruction, diminishing biodiversity and climate change along with rising inequality, debt, conflict and refugee flows are known but unimplementable. The current essay examines underlying causes of socioeconomic deterioration and entrapment, suggesting a comprehensive collective intelligence enterprise be launched to prepare for the global transition facing humanity.

We live at a time of unique contradictions, confusions and uncertainties. The material quality of life for the average person in the developed world exceeds that of the pre-industrial aristocracy, yet inequality has been increasing since the early 1980s, leaving many to feel left behind. For socioeconomic groups below the top 20 %, traditional avenues of personal advancement are failing, resulting in an entrenched underclass, ghettoized in both urban and rural areas (Taylor, 2017). Poverty reduction in the developing world has been more successful than doubters originally thought, but overall progress toward the UN Millennial Development goals is decelerating while in Sub-Saharan Africa the total number living in poverty increases. Further, almost half the world lives on less than $5.50 a day (World Bank, 2018). Using the World Bank's definition of extreme poverty as living on $1.90 per day, in 2015 one-in-ten of Earth's inhabitants continued to live in dire conditions. If consumer prices increase slightly faster per year than do incomes in the less developed world, essential goods become increasingly out of reach for most of humanity—who spend what little income they have on food and shelter.

Democracy enveloped global politics in the aftermath of the Soviet Union's collapse, bringing the hope of a permanent increase in liberty, fraternity and opportunity. This is summarized in the "End of History" thesis articulated by Fukuyama (1992). Despite nearly worldwide installation of democratic institutions, with national programs of enfranchisement and reconciliation implemented, a growing percentage of citizens see these efforts as a sham, believing democracy is failing the people (Pew Research Center, 2019; The Washington Post, 2018). Despite progress made toward meeting the UN Millennial Development goals, unprecedented numbers of refugees struggle to move to the developed world, fleeing war, poverty and sectarian conflict. Finally, recent surveys in America and Europe show that the current generation of adults believe that their children will not live as well as themselves (Pew Research Center,

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2017). The notion of socioeconomic "progress" has been at the core of the western social contract for over 200 years. When a cherished social contract begins to fray for the majority, social fabric starts a process of unraveling, that in turn precipitates sociopolitical consequences. Collectively, these facts are symptomatic of western civilization transitioning from its colonization to its final climatic stage of development. This thesis will be elaborated upon in the current essay and is assumed to be, and is presented as, the baseline, overarching scenario that will impact most conceivable futures.

The cycle of civilization has happened before and will happen again, and, as the old saying goes: "History doesn't repeat itself, but it often rhymes." What is unique this time around is that the span of western civilization is global, reaching into all corners of the world, engendering major stress on earth's planetary boundaries. One conclusion made here is that in the end humanity will survive this transition, but only in smaller numbers with a circumscribed view of human society, hemmed in by permanent ecosystemic damage to Earth's planetary systems. Those who prevail will be those fortunate enough to be born in the right place, to have superior intelligence, to have the right parents, to have become rich or famous and/or to have just been lucky. These people may number in the millions, but not billions—and the coming struggle between the haves and have-nots will be challenging and bitter. There will be those with wealth and power who will desperately fight to maintain their socioeconomic position despite the rising forces opposing the status quo. Yet some from top socioeconomic groups will unify across national boundaries with an alternate vision of tomorrow. The wealthy elite's existing international network reflects the fact that they have more in common with each other than with the rest of humanity. Like the survivors of a sinking ship, they will climb into the lifeboat together and call one another friend during the coming struggle to find a port, while their status quo brethren fight over dwindling scraps left onboard. This global grouping will not be based on nationality, race or creed, but on a shared desire to survive while creating a sustainable world for themselves and their children. In time this core group will install the groundwork for a new civilization—that will in turn become the foundation for humanity's future. The port at which they come ashore can be imagined but not known, yet all will set sail and row together as one toward the uncertain horizon. This paper focuses generally on the causes of civilization's decline and begins the discussion on the form of, and what is important to take into, this lifeboat as it heads toward that unknown port of disembarkation.

Western civilization is a nebulous concept, so requires some clarification before going further. It embodies many entwined dimensions, only some of direct concern in this essay. However, all dimensions are interconnected, so each will be affected by the weakening of that which supports the entire edifice. Western civilization traces its roots to 18th and 19th century England, when many disparate developments converged to ignite the Industrial Revolution. This took place in the context of the Enlightenment with its many transformative ideas, fostering the rise of the scientific method, capitalism and democracy. This trilogy formed the pillars of the first secular ideology (i.e. the Liberal Tradition or Humanism) which became the social philosophy of western societies and the dynamism behind its success in spreading around the globe. Democratic representation with enshrined individual liberties, an objective rule of law with strong property rights, and the social contract with its core Ethos of Progress awakened a slumbering humanity. For the first-time ever a civilization aligned the reservoir of human potential with social objectives in an accommodating socioeconomic environment. Intellectual property rights focused the scientific project, leading to a steady progression of technological wonders. In short, installing democracy and capitalism simultaneously unleased human potential in the form of industry and entrepreneurship; directing the majority in a coordinated economic cadence, bringing persistent growth and material prosperity. It is this materially intensive, as well as extensive, human activity that is of relevant concern. It is unstainable yet essential in financially underwriting the social, political, economic and cultural dimensions of all nations that have embraced the systemic model born from the Industrial Revolution. Despite its illiberal political structure, the Chinese system post-Deng Xiaoping exemplifies a "western" socioeconomic dynamic that will not be spared. Its story will be different, yet the result will be much the same as that for democracies.

Something is amiss and not understood. The rise of false truths obfuscates and distracts, adding to social confusion. In what follows there is a distinction made between "tribal truth" and "objective truth", both of which are multi-dimensionally and not fully fleshed out here. Tribal truth resonates with the human psyche needed during the millennia spent on the African savanna long ago. In *The Enigma of Reason* (2017) Sperber and Mercier state that the evolution of reasoning had two purposes. One was to permit our ancestral hunter-gathers to be successfully collaborative. To be cooperative requires building and affirming group identity, so this reasoning focuses on evaluating and justifying shared beliefs, arguments and actions related to social cohesion. Recent studies suggest that this dimension of reasoning is hard-wired into our brains (Kaplan et al., 2016). The other evolutionary purpose of reasoning is to recognize "objective truth". There is tremendous survival value in perceiving and reacting to the wolf growling behind nearby bushes, or to your car careening out of control on an icy road. The reasoning here is also hard wired into our brain, involving a reflexive action demanding little attention. More advanced issues of objective truth, such as whether God exists, or that climate change is real, are more difficult for most people to comprehend. On more complex topics, cognitive limitations such as bounded rationality, asymmetric information, heuristics and biases come into play. It is here that those with dominant power often use the tools of tribal truth to persuade, inculcate and sustain the status quo. The net result is a socioeconomically entropic state, the stage of senescence when civilization is characterized as progressing increasingly from order to disorder.

While we witness this playing out in populist politics today, there is a deeper issue involved: the continuation of the post-WWII western civilization form. The perceptual foundation for misunderstanding on this topic rises from the fact that what is good for the individual is not always good for humanity, although the reverse continues to be enshrined in societal beliefs, practices and policies. Take, for instance, the well-documented phenomenon "tragedy of the commons" (Hardin, 1968). It occurs whenever there is unrestricted access to a resource useful to humans and where it is assigned either an artificially low or zero price. We presently have two major commons that are shared by all life: the atmosphere and the oceans—largely unseen yet essential pillars supporting civilization's existence. The reason the commons are associated with tragedy is that humans pursuing their own self-interest in exploiting the zero-priced, shared resource, deplete or degrade it beyond redemption for future generations. In all instances, the miniscule

impact attributable to individual exploitation becomes deleterious to humanity when exploited by many. The "tragedy" in this has grown over time yet, at present, only marginally impacts most people. It manifests within the issues of habitat destruction, diminishing biodiversity, climate change, breakdown of oceanic thermohaline circulations and rising seas. As the "tragedy" spreads, so do the consequences, accelerating the negative feedback loops within civilization's movement toward crisis and collapse.

There was a time before the Industrial Revolution when Earth's ecological systems were healthy and regenerative, with seemingly inexhaustible environmental sinks for life's refuse. Those days have long passed, and we have had over half a century to respond with ameliorating political action—and have failed. Garret Hardin's "The Tragedy of the Commons" article was published in 1968 while Rachel Carson's *Silent Spring* earlier in 1962. The changes we need to take have been rejected or given token nods. While society tinkers around the edges with recycling, renewable energy, and conservation, the only viable solutions are extreme and unpalatable. They include reducing our numbers and a top-down restructuring of economic systems to be socio-environmentally sustainable. The books and articles concluding these needs are monumental—they resonate as true yet are ignored within political power structures. Why has this happened? Those with socioeconomic authority resist all attempts to implement necessary changes since they have everything to lose: wealth, income, influence and status—and they have the power to successfully challenge potential loss of privilege. For the first time in history they straddle the world with common purpose, using the tools of tribal truth to obfuscate and manipulate the public's perception and dialogue. To understand necessitates a review of two root causes of civilization's current move into its climatic stage: human nature and overpopulation.

1. Human nature

Our human genome developed on the African savanna during pre-history, adapted to increase the likelihood of achieving immediate benefits for a limited group in a relatively short span of time (Wilson, 2012). Human beings are a tribal species, and our perspective remains stubbornly tribal. In the end, the destiny of humanity is tied to the capacity of the human mind. Humans are unique with their penetrating intellect characterized by a deep pool of reflective, self-aware consciousness. Reflective consciousness, along with the propensity for extended attention, provides the basic architecture of the human mind, enabling creativity and problem solving. Our African savanna ancestors and people today share a motivational system outlined by Abraham Maslow (1968). After fulfilling "basic needs"— such as food, shelter, and clothing—people move on to try meeting "higher needs", that includes securing a stable living environment, achieving social recognition, and self-fulfillment. To help meet these higher needs, individuals seek psychological capital—in the form of approval and cooperation from family and peers—to reinforce core strengths toward enabling them to realize greater potential. Pursuing and attaining these goals create mentally healthy, productive, and happy humans. Happiness, in the Greek sense of *eudaimonia*, is the desirable outcome attained by satisfying one's multifaceted needs. Pursuing happiness would be a straightforward process, if only rationality was consistently dominant—but it is not (Kahneman, 2011). The power of rational thinking is limited and varies between individuals. It also fluctuates within a given person over time and seems to have a genetic basis that limits its expression (Pinker, 2002). The augmentation of individual power by technology causes flaws in rationality to have amplified consequences. These past three centuries of history demonstrate how easily and instinctively people seize upon technology to enhance self-interest and concerns of their tribal networks. Furthermore, in the same period, we have left a self-indulgent trail of pollution, death and destruction—testimony to a darker side of human nature.

Psychologists Amos Tversky and Daniel Kahneman established a cognitive basis for common errors humans make (1981). Economist Richard Thaler later collaborated with Kahneman to explore a range of puzzling economic behaviors (1982, 2000). Their collective work spawned "prospect theory" and the subdiscipline of behavioral economics, confirming Herbert Simon's insight from the 1950s that human reasoning has certain distorted propensities and limits (i.e. bounded rationality; 1957). Psychologists note that humans display mental mechanisms that not only lower the influence of logic but can also, paradoxically, jeopardize individual and collective security. These mechanisms often helped those humans who lived in simple Paleolithic tribes, when quick decisions fed by emotional response often meant the difference between life and death (Livingstone-Smith, 2011). They include:

1 Denial: People often refuse to accept unexpected bad outcomes.
2 Dehumanization: Viewing an outside person or group as subhuman makes it easier to project malicious intent, negating our innate standards of fairness and sense of guilt, making ostracism or violence against them appear justified.
3 Preconceptions: People often use simplified mental benchmarks and filters (i.e. heuristics) leading them to dismiss new evidence regardless of merit. Confirmation bias perpetuates misunderstandings.
4 Assumptions: People develop theories of an opponent's behavior that in turn affects behavioral posturing, increasing tension and misinterpretations.

Another relevant issue facing us is the contexts in which humans naturally engage in altruistic behavior. Paleolithic human's expression of familial or nonfamilial altruism endures for only a couple generations, with concern for future generations subsequently deteriorating (Dawkins, 1989). The fact is there used to be no compelling need for longer-term concern. However, such limiting of intergenerational interest leads to a shorter-term policy horizon than that needed to address today's global problems. For instance, over the past half-century, western citizens have endorsed rising public indebtedness. Citizens thereby enjoy greater consumption than could be provided out of current income. This boosts positive hedonic sensations (more goods and services consumed today) while reducing negative hedonic sensations (lower taxes paid today) and is reinforced by the basic human predisposition for immediate gratification. However, at some point, any debt, even a public one, must be repaid: Public debt is delayed taxation. At that future point we face a set of conundrums; for as soon as we must repay, we necessarily experience a significant increase in negative

hedonic sensations. Given that we dislike losses more than twice as much we like equal gains, we resist, which merely entrenches the unsustainable trends that eventually leads to crisis (Tversky & Kahneman, 1991). This insight further helps explain the lack of general concern for damage to the biosphere or humankind's enduring faith in a "technofix" solution—it is easier to brush off emergent problems if you believe that a necessary fix will surely be found when needed by some future generation that you are not too concerned about in the first place.

Finally, research reveals that individuals often behave differently in group contexts than they would if acting alone (i.e. crowd psychology). Within a group setting individuals often take up the group's identity, ignoring their own conscience, suspending judgment and accountability. The result is that individuals within groups participate in acts they would never commit separately. Social psychologists say that a participant enters a lower state of self-awareness called "deindividuation". The resulting anonymity can have horrifically destructive effects on innocent lives and property, as witnessed during riots, genocides and wars (Cantril, 2002). Extending these insights, the anonymity associated with group behaviors coupled with limited future concern helps us to understand why individuals in developed nations can be insensitive to poverty, emigration, environmental destruction, water shortages and excessive debt on the global level. When one adds human flaws to an increasingly crowded planet, effects become amplified—there are over 7 billion of us all behaving much the same way.

2. Population

Population growth during the past 200 years has had a positive impact on global economic growth and standard of living. Without a doubt, the powerful, pervasive, and positive effects brought about by Enlightenment thinking and Industrial Revolution propelled civilization to higher states of wealth and welfare. Advances in public health, medicine and agricultural productivity set off exponential growth in population, reinforcing economic progress within a series of positive feedback loops. The historical events represent a transformative tsunami, with all dimensions of civilization and Earth changed forevermore. As the 19th century began Earth was still pristine for humans with their newly minted ideas. There were more unknown places to explore and exploit while human population was low, estimated at being about one billion globally in 1800. Abundant resources were readily available to support industrialization and upsurge in living standards. New technologies arising from scientific research, innovation and commercialization drove the entire enterprise forward. Economists would say the potential for both extensive and intensive economic growth on the global stage was at a maximum back then. Capitalist industries and markets were freer—within the formidable command of enabling, imperial power—to spread across the planet, bringing more and more places, people and resources into the western economic paradigm.

The United Nations projects a further 45 % increase in human population, a forecast that might well have significant consequences. Specifically, the UN projects that global population will grow from 7.7 billion today to about 11.2 billion by 2100 with 95 % certainty (2017). Once human population peaks, fertility may begin a gradual fall, leading to the population growth pattern moving from its current exponential path to one that is logistic. This pattern has already appeared in developed nations with demographers projecting it to occur in time throughout the less developed world. Human population is estimated to level off between 11–12 billion with every reason to believe that population decline commences in the 22st century as world-wide fertility rates fall below replacement level. Before we make a sigh of collective relief, there are three relevant details to consider. First, most additional population growth will occur in the less developed parts of the world, already struggling to pull themselves out of poverty. Second, before human population begins to decline, we and our planet must get through the next 80 years—or more like 150 years or so before our numbers return to even today's level. Third, the projected 3–4 billion surge in global population is forecast to be the largest increase ever in absolute number during any 80-year period in history. While the average annual rate of population growth is decreasing, the number of people born increase in total number—because each year the base is larger so a decrease in the growth rate can still result in more people being born. Between these considerations lie many risks, all to the downside. Already unprecedented numbers of immigrants are trying to move to the richer, more politically stable parts of the world while sectarian (i.e. tribal) strife within poorer countries becomes more common, with technologically empowered militants and autocrats amplifying their power.

Earth may be able to feed, clothe and house the 7.7 billion people who are presently here—although several billion marginally so. As the next 3–4 billion people arrive the question of whether this represents unsustainable overpopulation becomes significant. Overpopulation is generally defined as a situation where an organism's numbers exceed the carrying capacity of its habitat. The problem is that the 21 st century will witness, and some would say is already witnessing, a time when Earth—clearly a closed environment—experiences a set of innate and/or human imposed restraints. As limits are reached poorer nations will find themselves in a condition of "demographic entrapment"—a condition when a nation has a population more than its carrying capacity without the option of migration, with too little in export earnings to pay for critical imports. The net effect can be localized Malthusian crises with characteristics of mass starvation and sociopolitical instability. Climate change is already cited as making this tendency more probable in Sub-Saharan Africa. In other words, the low-hanging fruit sustaining population growth and prosperity these past 200 years has been plucked—or is being horded—by those fortunate to have industrialized and prospered earlier. The decline of global, westernized civilization as we know it may well be herald by poorer nations fracturing before the crisis spreads to the rest of our global village (Homer-Dixon, 2006).

One final facet is that we are not only a biological force but have become a geological one as well. It is suggested that our numbers are now so vast, our industry so extensive, that a new geological age has begun: the Anthropocene (Waters et al., 2016). This conjecture is rooted not simply in our numbers but in our nature as well: We are 7.7 billion individuals with insatiable collective wants on our way to becoming up to 11–13 billion strong, transforming myriad dimensions of Earth's hydrosphere, atmosphere, lithosphere and biosphere. One group of scientists has identified limits beyond which we should not push our planet (Stockholm

Resilience Centre, 2015). This research suggests we are nearing tipping points into radically different planetary states with unknown ecosystemic features. Earth systems are frustratingly complex, so the results are tentative yet worrying. The bottom line is that planetary boundaries exist and will restrain the current trajectory of civilization. Given the UN's population growth forecast, we may begin hitting some of these fuzzy planetary boundaries soon. BÁnyai states that environmental regulation has failed, for human behavior is "psychopathological" (2019). Her analysis supports the conclusion made here that civilization's decline is inevitable. Even if passing the tipping points move Earth into a still hospitable environment for humans, the transitions involved will magnify the tensions associated within the climatic stage of civilization. All this is symptomatic of human behavior and numbers, representing distinctive features during this phase of civilization's climax.

3. Fall of empires

Earlier civilizations followed a similar pattern of development characterized by what Theodor Mommsen defined long ago as genesis, growth, senescence, collapse and decay (1854-1856). Since Edward Gibbon's extensive work, *The Decline and Fall of the Roman Empire*, scholars have taken an active interest in what causes the eventual decline of all empires (1776-1788). In the case of Rome, Gibbon suggested decay of the elite was brought on by the "natural and inevitable effect of immoderate greatness". Arnold Toynbee refined Gibbon's ideas by adding that the political elite became increasingly parasitic, leading to an increasingly marginalized majority who undermine the integrity of empire in numerous ways (1939). Other macrohistorians, such as Oswald Spengler, argue for a world view based on the cyclical rise and decline of civilizations, suggesting we have begun a centuries-long process of decline mirroring that witnessed in antiquity (1926). Joseph Tainter's study of Rome identified increased sociopolitical complexity—causing rigidity and fragility while drawing off scarce resources—as a major cause of its decline, with many suggesting his insights relevant today (1988). For many ancient, albeit smaller, civilizations, Jared Diamond suggests a quintet of external factors led to decline: environmental degradation, climate change, dependency upon external trade, intensifying levels of internal and external violence and, finally, societal responses—or lack of response—to all these factors (2005). For modern civilization—and this was likely true for many ancient ones as well—Mancur Olson argued that special interest groups accumulate around the central power structure, drawing off resources, impeding the ability of central authorities to respond appropriately to the growing threats to the integrity of empire (1982). One final point found in all these studies is that leaders essentially failed to deal with developing, macro-problems, both internal and external, before reaching the threshold of crisis and impending collapse.

Galtung and Inayatullah's ambitious book, *Macrohistory and Macrohistorians: A Theoretical Framework*, examines the contributions made by twenty macrohistorians in understanding multiple facets of the cycles of civilization (1997). A further ambition of this work was to produce a comparative and integrative history of the patterns and causes of change throughout time. They begin deep in the past with the premodern insights of Ssu-Ma Ch'ien, Augustine and Ibn Khaldun; progressing to 19th century contributions of such dialectical thinkers as Friedrich Hegel and Karl Marx; ending with the more recent thinking of Pitirim Sorokin, Prabhat Sarkar and contributors to the Gaia hypothesis. This sweeping set of transhistorical and cross-cultural perspectives of social change are then treated comparatively, resulting in the definition of twelve different "sciences" addressing change in the human condition. These "sciences" reflect diverse pedagogical perspectives on the study of civilizational change, each focusing on distinct forces, patterns and units of analysis (i.e. vectors of change). Reflecting what has been previously noted, Galtung and Inayatullah identify "stages and patterns" in the cyclical development of civilizations as a common theme among the macrohistorians reviewed. Inclusion of non-Western thinkers infuses the work with a rich set of historical experiences and perspectives while providing us with analytical tools to help understand on multiple levels what is happening within western civilization today.

There are further works suggesting that the present course of humanity has refocused the process of decline of western civilization to distinctive factors (i.e. planetary). From Paul R. Ehrlich's neo-Malthusian life-long work since he published *The Population Bomb* in 1968, to Meadows et al. (1972) ongoing work since introducing the "Limits to Growth" hypothesis in 1972, to Edward O. Wilson's 2002 concept of HIPPO (Habitat destruction, Invasive species, Pollution, Human Over-Population, and Overharvesting), many intellectuals have warned that trends associated with human expansion are unsustainable, pushing today's civilization into its climatic stage. More recently, the Ehrlichs wrote a piece entitled "Can a collapse of global civilization be avoided?" (Ehrlich & Ehrlich, 2013). They begin by stating that "global collapse appears likely" due to overpopulation and overconsumption with dramatic cultural change necessary to avert catastrophe. Laura Spinny published a summary of additional corroborating research all pointing to socioeconomic disintegration, concluding that "almost nobody thinks the outlook for the West is good" (New Scientist, 2018). Lastly, Luke Kemp, from the Centre for the Study of Existential Risk at the University of Cambridge, published a BBC report noting that "collapse may be a normal phenomenon for civilizations, regardless of their size and technological stage", and that "our tightly-coupled, globalized economic system is, if anything, more likely to make crisis spread" (Kemp, 2019).

4. Questions to ask before climbing into the lifeboat

What is the Earth's carrying capacity for humanity? Is it 11 billion or some larger or smaller number? Also, what needs to be done to balance the human desire for personal opportunity, physical comfort and liberty with a sustainable, habitable planet? Further, what have we learned and what do we cherish about our current civilization that we wish to preserve for the future? Finally, how will we carry our treasurers into the next civilization? These are not easy questions, but they must be asked and answered in the next several decades.

The first question requires that we define what a "sustainable" population size would entail. To many it requires a maintainable level of the physical components providing a healthy standard of living for all, consistent with viable ecosystemic balance. Such a

standard of living would require ready access to the basics of nutrition, clothing and shelter. In addition, it would require equal entry to the higher reaches of the Maslow hierarchy through provision of a stable environment, basic health care and education, as well as minimal socioeconomic barriers to advancement within a strong legal system. Providing such would guarantee equal opportunity to everyone toward achieving aspirations compatible with innate, or acquired, abilities and drive. In other words, the sustainable population size requires something more than mere survival of our species, since a healthy civilization requires dynamic engagement of, and opportunities for, its members. If the researchers at the Stockholm Resilience Center are correct in stating that Earth will be moving into a profoundly altered state in coming decades, then Earth's carrying capacity for humanity at any future time is indeterminable today. This has not stopped prognosticators from making estimates based on our planet's current ecosystemic state. Paul Ehrich places the optimal population of the planet between 1.5 and 2 billion people (The Guardian, 2012). Unfortunately, most research on the subject varies so much as to be currently useless. The reason for such disparate conclusions distills down to the underlying assumptions made by those doing the research—and this too can become victim of partisan, tribal truth. There are those that believe that human adaptability and ingenuity places no limit on human population size while others derive a number less than that suggested by Ehrlich. Further research is needed, and, in the end, the sustainable population range determined requires balancing the carrying capacity of Earth by ecological footprint analysis with some minimum scale required to maintain humanity's diversity within a transformed, vibrant civilization design.

Many would point to China's lapsed one-child policy and say it was a failure since it was illiberal and resulted in an inverted demographic pyramid. The first part is true and, as to the second part, there are implications arising from this multi-decade policy that will negatively impact China's future economic growth, which is construed as a bad outcome. This last conclusion arises from the questionable assumption that aggregate economic growth is something we should always strive for. What really matters is a nation's "human development" level over time. The fact is that it's not bad to experience stagnant or negative GDP growth if real per capita human development, as defined by the United Nations' Human Development Index, remains positive (United Nations, 2019). This is the trick public policy makers need investigate and then achieve. Population decline in the context of robust technologically driven productivity gains is one avenue toward achieving this goal (Frey, 2019). Büchs and Koch have investigated the degrowth transition, finding that wellbeing need not suffer (2019). However, they note that the psychological transition in expectations will not be easy. Echoing this concern, Fergnani underscores the difficulty in disentangling the instilled psychological pleasure individuals gain as participants in capitalism (2019). The coordinated cadence of human effort born of the Industrial Revolution created a psychosocial dynamic that will prove deeply resistant to paradigmatic change. This too requires careful research, but an inescapable conclusion is that it is crucial to modify our inculcated beliefs concerning economic growth.

What do we want to carry into our future from our current sociocultural fabric beyond fine arts, literature and accumulated STEM knowledge? Thomas Jefferson said in the opening lines of the Declaration of Independence that, "We hold these truths to be self-evident, that all men are created equal, that they are endowed, by their Creator, with certain unalienable Rights, that among these are Life, Liberty, and the pursuit of Happiness". Protection of your person and your family, the freedom to live your life without excessive social hindrance and the right to pursue happiness, all resonate with basic human nature. James Q. Wilson, among others, have argued that morality has a strong genetic component, so these new concepts, embodied within the then new democracy, had a strong appeal to humanity's complex, evolved sense of fairness and justice. While from an objective perspective these "rights" were anything but "self-evident", claiming so brought them into the social contract, creating a powerful motive among citizens to defend and preserve the young nation. The mid-20th century innovation of connecting individual with social rights, enshrined within a system based on the preeminence of the rule of law, became a potent unifying force and, in many ways, the final socioeconomic achievement the Liberal Tradition made at the end of western civilization's colonization stage. There is much here worth preserving for it nurtures collective intelligence networks while preserving social cohesion. These points need to be reflected upon and expanded through further investigation.

Will these issues and questions be addressed in an anticipatory or reactive manner? With a reactive approach, the path we're on, we risk the ongoing decline, collapse and subsequent resurrection to be hijacked by those using tribal truth to create something partisan and potentially devolutionary. While we can imagine governments constructively rising to and addressing the stresses of civilization's demise, such thinking has proven misplaced and fruitless. The Ehrlichs, as many others, suggest that "widely based cultural change is required", which is also improbable (Ehrlich & Ehrlich, 2013). Even where we see awareness of such issues as climate change sculpted into active social policy, the protective hand of human biases and special interests lie in the shadows. Further, if the problem is rooted in our numbers and behavior, such polices add up to band-aids—they serve to delay the inevitable. Barring some techno-fix set of miracles, which is possible yet not probable, we must conclude that humanity's response will continue to be reactive until crisis and collapse are upon us: We are captive to the cycles of history.

At some point before collapse, as awareness grows, an overdue but hopeful reaction is possible, entailing a focused collective intelligence effort attending these issues and questions. For sake of another name, let's call this the "Human Foundation Project" (Taylor, 2012). Parallel to this project, many in the top socioeconomic groups will be building their walls, underwriting their private militias and fortifying to survive collapse. Their long-term objective will be to create a forthcoming civilization shaped in their image—the one that is now proving unsustainable. This is a dead-end vision for a viable future, so we must look elsewhere for humanity's salvation.

Ironically, as stated at the beginning of this essay, it's the global rich and powerful that will make sure they're the first to climb into the lifeboats. Most of these people are self-centered yet gained their status through being intelligent, industrious and adaptive. Among them are a few concerned visionaries—such as Bill Gates—known for his, and his wife's, generosity through The Bill and Melinda Gates Foundation supporting public health and education initiatives around the world. There are numerous others that could be mentioned—many well know entrepreneurs, actors and financiers—but the point is that not all the rich are narrowly self-

interested: Many put their wealth behind honorable causes. J. Pierpont Morgan is often cited as single-handedly saving the United States from financial collapse during the panic of 1907 (Chernow, 2010). It has happened before and can happen again. If we don't want the self-serving rich and powerful with their private militias emerging from their gated communities, turned personal bunkers, to reclaim the storyline of tomorrow's civilization, we need to make a contingency plan to set the stage for something better, encapsulating the philosophically and socially noble features that emerged from the Enlightenment and evolved Liberal Tradition. Once the financing is in hand, the work of the Human Foundation will commence.

The Human Foundation will design a blueprint of a new civilization to emerge at an appropriate time and place possessing the most fertile environment for development. Emergence will eventually take place in phases with the ultimate objective of dominating the storyline of civilization's reconstruction. It will have a charter and mission statement built upon the following core principles and goals:

1 Preserve: Conserve accumulated knowledge related to STEAM fields.
2 Delineate: Define what is worth using from the past in designing our next civilization. This includes study of cultural, political, legal, economic and social practices.
3 Create: Design a new, robust civilization based on the objective of establishing a world order that nurtures ongoing evolution of humanity and life on earth.
4 Sustainability: Emphasize sustainability in all dimensions of institutional design.
5 Outreach: Communicate findings with as broad an audience as possible.
6 Community: Build a network of individuals and organizations sympathetic with the objectives of the Human Foundation Project.
7 Endure and Protect: Create the physical and socioeconomic mechanisms to sustain the Human Foundation through collapse of western civilization. This includes providing for and protecting those associated with the foundation.
8 Phases: Lay out the necessary steps during and after initiation to make the design a reality.
9 Monitor and Assess: Observe and recalculate prospects and limitations presented to the new design as the collapse of Western civilization progresses.
10 Timing: Be prepared to move decisively when and where opportunity is presented.

Soon after its formation the Human Foundation will hold a series of symposiums, bringing visionaries and specialists from across the spectrum of human knowledge together. Each symposium will be centered on critical themes, such as "Sustainable sociocultural practices best serving human needs" or "Beginning institutions, rules and laws" or "Balancing planetary and human systems", etc. Early on a permanent staff will be necessary to focus collective intelligence on the objectives of the project. Along with gathering and storing that which is to be preserved, while applying foresight intelligence to design a nascent civilization to come, a vital concern will be to find means to endure civilization's collapse such that formulated plans remain actionable.

Some comments are required on items #8 to #10 in the mission statement principles and goals. Anticipated escalation of armed conflict would destroy the functionality of national sociopolitical institutions in many regions of the world. Besides mass emigration of displaced citizens, other geopolitical consequences are difficult to predict. Rising seas, more severe weather events and increasing temperatures might drive those from densely populated coastal regions inland, increasing competition for resources, social tension and, in some cases, the likelihood of famine. Some nations will disappear (e.g. the Maldives) while others may be relatively untouched (e.g. New Zealand). Global supply chains could easily be disrupted and trade impaired, with the overhang of debt and defaults causing financial market disruption and global GDP to stagnate or turn negative. Public policy initiatives will be constrained by past excesses. Unmet expectations of citizens in the developed world will probably amplify idiosyncratic social and political instability. What if nations or terrorist groups turn to the use of weapons of mass destruction to achieve their objectives? Perhaps there will be nations welcoming the Human Foundation early in the course of collapse, willing to alter their institutions, public policies and legal structures to accommodate the foundation's vision. All these possibilities must be monitored and factored into the Human Foundation's plans for when, where and how to initiate the first stages of its plan for establishing the next civilization. Researchers at the Human Foundation will need to engage in continuous scenario analysis and planning. The precise nature of Western civilization's collapse is unknowable, while the nature and extent of ongoing environmental damage, with its impact on regional habitability, a further unknown. The key will be to design a robust, adaptable plan within a wide range of hypothetical scenarios as the changing state of the world is revealed during the final phases of collapse and decay.

5. Next steps on humanities' journey

All so far is premised on the assumption that western civilization it in decline. To many it certainly doesn't feel like this is happening: "…people are carrying on as usual, shopping for their next holiday or posing on social media" (Spinny, 2018). There are two relatively recent developments at work, each having played a role in temporarily counteracting degeneration, sustaining the stage of senescence. First, the global financial system shifted from a debit to a credit basis in the early 1970s. This has permitted an historic increase of debts relative to assets. Debt is essentially borrowing against future income, boosting growth and consumption temporarily in the current region of time. At some point the bills from the past must be repaid, shifting decline onto an accelerated path in a shorter period than would have otherwise occurred.

The Covid-19 epidemic has quickly revealed the fragility of this credit expansion cycle. Twenty-five central banks had announced quantitative easing initiatives by mid-April 2020 to mitigate the economic harm inflicted by viral suppression policies. Further, governments around the world had announced a total of $8 trillion in additional fiscal spending to soften the blow. These efforts

entail pumping liquidity into markets through central bank purchases of various private and public financial instruments. The net effect is to transfer more of the accelerating debt burden from the private to public sectors. Along with this, some predict that the United States may run annual fiscal deficits in both 2020 and 2021 of over 3 trillion dollars, at a rate that may approach 18 % of GDP. This begs the question as to the limitations of this approach to economic stabilization. BCA Research, the organization that coined the term "debt super-cycle" back in the 1970s to describe this phenomenon, has declared that the end of the super-cycle began in 2014 and is currently accelerating, ushering in a dangerous period of insidious developments that will fundamentally alter the global economy and civilization as we know it (MarketWatch, 2020).

The other factor offsetting degeneration is serendipitous: Simultaneously with the change in the global financial framework, a new technology cycle based on the computer chip commenced. This fed the process of creative destruction, fueling economic dynamism and growth. All technology cycles follow a similar logistic growth curve, eventually succumbing to what economic growth theorists call "the fishing out effect". The most profitable applications are developed early, leaving a diminishing number of related, or nested, innovations and inventions for later commercial exploitation. While at first the cycle causes an acceleration in productivity, this effect diminishes until the rate of innovation falls back to some baseline rate (Gordon, 2016). There is no doubt we are on the tail-end of the computer chip cycle, reflected in the 1.1 % average productivity gains experienced since the Great Recession ended in 2009 (Bureau of Labor Statistics, 2017). Undoubtedly there will be some new technology cycle, yet timing is unpredictable, with the nature of the next cycle not necessarily the same as that witnessed in the past. For instance, a new cycle based on bioengineering may enhance the quality of life for humans but may not entail as potent "gales of creative destruction" in the economy as before. Further, in the beginning it's the privileged who will reap the benefits in such a cycle—for they can afford the enhancing treatments—-contributing to inequality, increasing the odds that these enhanced humans enter the lifeboats as the ship of civilization sinks. All this has yet to be written, yet we are on the downward slope; already in the stage of senescence with collapse and decay temporarily deferred.

When our numbers were small, the benefits of human strengths outweighed our weaknesses, while the abundance and redundancy of planetary resources and natural systems masked our excesses. Like the air we breathe, endogenous earth systems operate with invisible hands we cannot see or appreciate. Sustainability for *Homo sapiens* requires that we avoid two controllable causes of past species extinction: habitat degradation and predacious competition. Human niches now span the entire planet; therefore, the health of global ecological systems becomes of relevant concern. Habitat degradation, the main cause of past species extinctions, can be caused by natural or, in the case of humanity, induced shifts in the atmosphere and biosphere. The deleterious effects manifest as environmental disruption and/or reduction in available resources for members of our species as well as other life forms. Kareiva and Carranza observe that Earth's systems are presently raising the existential risk of ecosystemic collapse (2018). Predacious competition, another cause of extinction, historically has come from inter-species competition within the Darwinian dynamic. Given the uniqueness of the human life form, today it comes in the form of inner-species competition within geopolitical contexts and power dynamics (e.g. witness Syria this past decade). This century's most significant fallacy is that actions that once made perfect sense for the individual, when multiplied by our growing numbers, are producing formidable forces contributing to the decline of western civilization. Both habitat degradation and inner-species competition during the early Anthropocene is caused by our numbers and behavior. This suggests that we need to reduce the first and restrain the second. While these are necessary conditions, doing so is beyond the capacity of humanity to achieve within the existing paradigm of civilization.

Ultimately, the destiny of humans is tied to both our Paleolithic mental limitations and our unique imagination born of reflective consciousness, and in the latter rests great hope. The most significant artifact of humanity is knowledge, which has a unique property: Once created, knowledge cannot be destroyed, and ones use of it does not diminish what is available to others in perpetuity. There are simply hordes of academics, scientists and other information workers crawling along the surface of an ever-expanding body of knowledge, peering through their methodological microscopes, relentlessly contributing new facts, insights and theories. We have much to draw upon in seeking answers to the questions posed in this article, yet there is a growing and critical need for a fresh directional focus. While many of us have been told that the meek shall inherit the Earth, this was likely just a cleaver byline to bring the poor and powerless into the arms of the early Christian church. Since the first civilization emerged in the Middle East, it has always been the powerful amongst us who have shaped history. It will soon be time for a few of them to do so again, but this time in a way that serves not only themselves and their children, but also humanity's collective future.

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